

VATIS

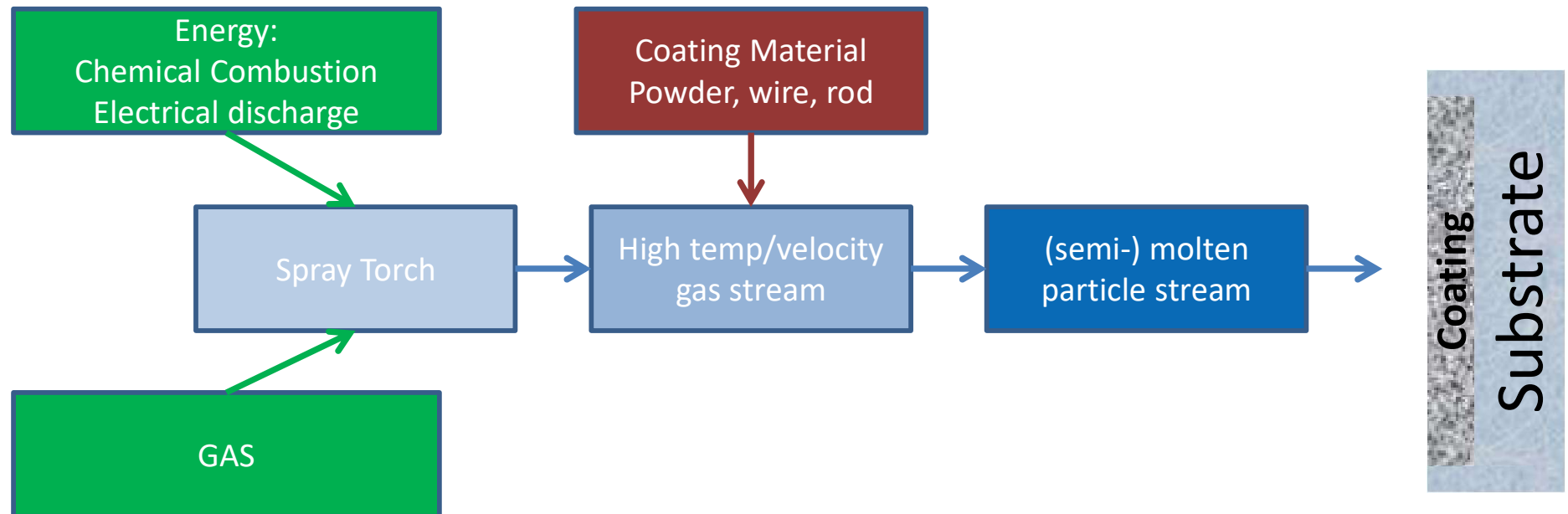
Thermal Spraying

Oplossingen tegen slijtage en aanplakken



Thermal Spraying

Process in which molten, semi-molten or solid particles (metal or non-metal) are deposited to form a coating



- Metallic coating: 17% Cr, SS316, TC or CrC
- Substrate remains cold (max. 100°C to 150°C)
 - >< Welding, Cladding
 - No Risk of thermal deformation
 - No impact on mechanical properties (thru thermal treatment)
 - No Pre/Post Heat Treatment



HVOF RAM

Supersonic gas stream (shockwaves)

Kinetic process (less thermal)

Impact (speed + mass of coating)

Flame Spray

Atmospheric pressure

Thermal process

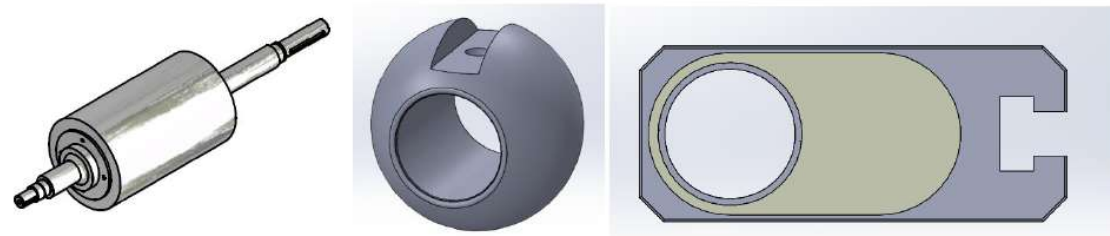
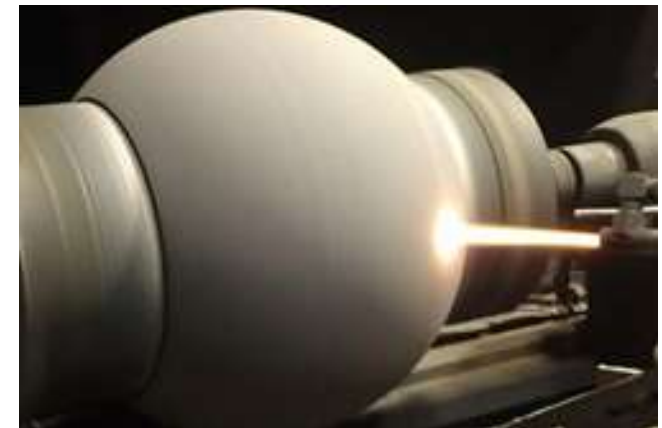
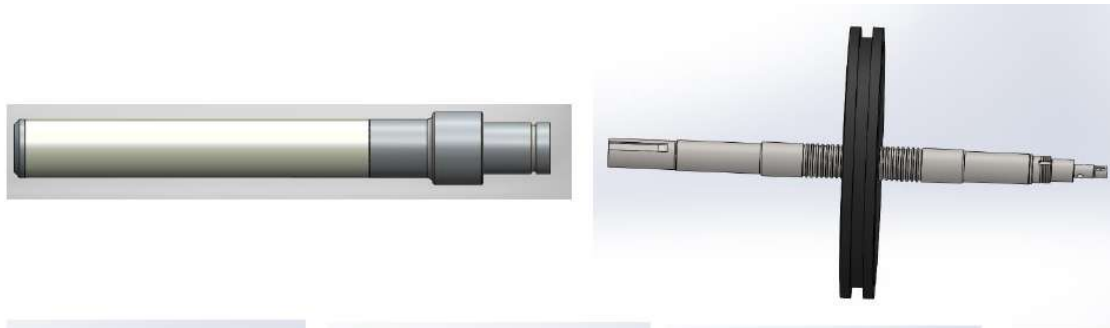
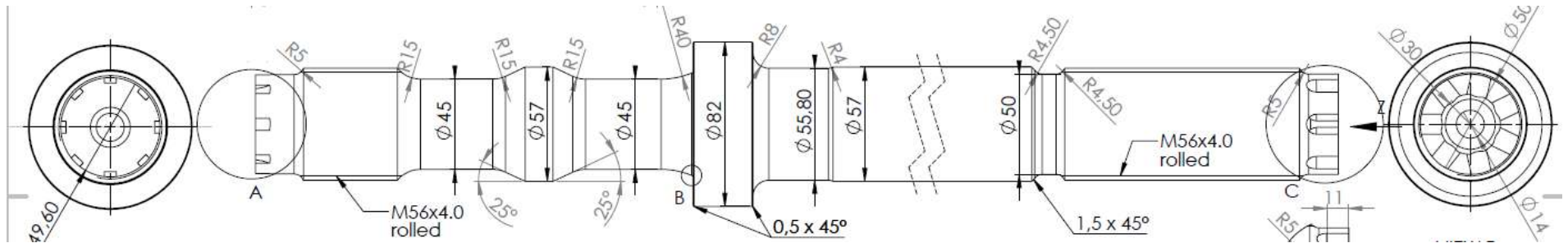
Low speed.

		HVOF RAM (Carbides)	Flame Spray (Metallics)
Gas Temperature	[°C]	2600 - 3000	3000
Spray Rate	[kg/h]	1 - 9	2 – 6
Flame Velocity	[m/s]	2000	100
Particle Velocity	[m/s]	700	50
Bond Strength	[MPA]	> 83 (12000 PSI)	7 – 30 (>83 fused)
Coating Thickness	[mm]	0.05 – 1.5 (5)	0.05 – 5
Hardness	[HRC]	55 - 72	20 – 35 (60 fused)
Porosity	[%]	<1	>10%
Fuel (typical)		O2 + H2, Kerosene,	O2+ Acetylene

	Metco 42C	Metco 444	Metco 106	Metco 201
Composi-tion	Chrome SS 17% Cr	Stainless Composite NiCrMoAl	Ceramic Cr-Oxide	Zi- Oxide thermal barrier
Hardness	35 HRc	80 HRb	65 Hrc	70 HRb
Bond	Good	35 Mpa	Good	Moderate
Porosity	13%	< 10%	< 5%	10%
Density	6,2	6,9	4,8	4
Max. Op. Temp.	540°C	870°C	540°C	>845°C
Properties Resistance	Wear resist, Heavy build up	Corrosion resist, heavy build up	Wear resist, erosion and cavitation	Erosion resistance > 845°C
Typical Applicat'n	Bearings, dimensional repair of carbon steel parts	Dimensional repairs, SS parts, Easy machining	Sealing areas, wear sleeves, liners	Burners, high temp. erosion, jets.

- Plungers / Piston-rod for compressors
- Manufacturing and/or Coating of new components for rotating equipment: shafts & sleeves for pumps, shaft sections of compressor rotors (lobe & screw type)
- Coating valve parts (balls, seats, spindles, trim)
- Repair of wear (shafts, shaft sleeves, rotors, plungers, bearing houses, ...)
- Special applications: tension- and bending rolls, glue cylinders, liners for compressors, heat exchangers (abrasive flue gas), mixing rotors, burners, bottom plates of grannulators..







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